

Amendments to the Claims

Please amend Claims 1-9, 11-32 and 34-38 to read as follows. Note that all the claims currently pending in this application, including those not presently being amended, have been reproduced below.

1. (Currently amended) An ink jet recording apparatus to be shipped
in which a recording head filled with transporting ink different from recording ink is
mounted on a carriage, said apparatus comprising:

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~~a carriage for mounting a recording head for effecting recording by~~
~~discharging recording ink and for moving said recording head; and~~
recovery means for effecting a recovery operation with respect to said
recording ~~head;~~ head; and

~~wherein said recording apparatus is forwarded from a manufacturing factory~~
~~in a condition that said recording head filled with transporting ink different from the~~
~~recording ink is mounted on said carriage, and wherein an on-arrival recovery mode~~
~~executed by said recovery means upon first usage of said recording apparatus by the user~~
~~differs from a normal recovery mode executed by said recovery means after the first usage~~
control means for controlling said recovery means such that an on-arrival recovery mode
executed first by said recovery means after arrival of said recording apparatus differs from
a normal recovery mode executed by said recovery means after a first usage of said
recording apparatus.

2. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said ~~apparatus includes~~ recovery means comprises suction means for effecting suction from said recording ~~head as recovery means,~~ head, and suction pressure in ink suction from said recording head by ~~means of~~ said suction means in ~~said the~~ on-arrival recovery mode is set to be greater than suction pressure in ink suction in ~~said the~~ normal recovery mode.

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3. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said ~~apparatus includes~~ recovery means comprises suction means for effecting suction from said recording ~~head as recovery means,~~ head, and a suction amount in ink suction from said recording head by ~~means of~~ said suction means in ~~said the~~ on-arrival recovery mode is set to be greater than a suction amount in ink suction in ~~said the~~ normal recovery mode.

4. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said ~~apparatus includes~~ recovery means comprises suction means for effecting suction from said recording ~~head as recovery means,~~ head, and ~~the~~ a number of suction operations in ink suction from said recording head by ~~means of~~ said suction means in ~~said the~~ on-arrival recovery mode is set to be greater than ~~the~~ a number of suction operations in ink suction in ~~said the~~ normal recovery mode.

5. (Currently amended) An ink jet recording apparatus according to claim 1, wherein ~~said the~~ the on-arrival recovery mode is a mode in which one kind of recovery ~~operations~~ operation in ~~said the~~ the normal recovery mode ~~are~~ is continuously executed ~~continuously by plural~~ a plurality of times.

6. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said recovery means includes suction means for effecting suction from said recording head, and ~~the a~~ a number of idle suction operations for discharging the ink from a cap by driving said suction means in a communication condition between ~~the an~~ an interior of said cap and the atmosphere upon ink suction from said recording head by said suction means in ~~said the~~ the on-arrival recovery mode is set to be greater than ~~the a~~ a number of idle suction operations in ~~said the~~ the normal recovery mode.

7. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said recovery means includes suction means for effecting suction from said recording head and a wiper for wiping said recording head, and ~~the a~~ a number of wiping operations of said wiper after ink suction from said recording head by said suction means in ~~said the~~ the on-arrival recovery mode is set to be greater than ~~the a~~ a number of wiping operations after ink suction in ~~said the~~ the normal recovery mode.

8. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said recovery means includes a wiper for wiping said recording head and

a cleaner for cleaning said wiper, and ~~the~~ a number of cleaning operations of said cleaner after the wiping of said wiper in ~~said~~ the on-arrival recovery mode is set to be greater than ~~the~~ a number of cleaning operations after the wiping in ~~said~~ the normal recovery mode.

9. (Currently amended) An ink jet recording apparatus according to claim 1, wherein said recovery means includes suction means for effecting suction from said recording head and a wiper for wiping said recording head, and, in ~~said~~ the on-arrival recovery mode, after ink suction from said recording head is firstly effected by said suction means, wiping of said wiper is effected.

10. (Original) An ink jet recording apparatus according to claim 1, wherein viscosity of the transporting ink is greater than that of the recording ink.

11. (Currently amended) An ink jet recording apparatus according to claim 1, wherein the recording ink includes color material and the transporting ink does not include color material or has less of a color component ~~fewer~~ than that of the recording ink.

12. (Currently amended) An ink jet recording apparatus to be shipped in which a recording head filled with transporting ink different from recording ink is mounted on a carriage, said apparatus comprising:

~~a carriage for mounting a recording head for effecting recording by
discharging recording ink and for moving said recording head; and~~

recovery means for effecting a recovery operation with respect to said
recording head; head; and

~~wherein said recording apparatus is forwarded from a manufacturing factory
in a condition that said recording head filled with transporting ink different from the
recording ink is mounted on said carriage, and wherein an on-arrival recovery mode
executed by said recovery means upon first usage of said recording apparatus by the user is
the same as a recovery mode executed upon exchange of said recording head among a
plurality of recovery modes executed by said recovery means after the first usage control
means for controlling said recovery means such that an on-arrival recovery mode executed
first by said recovery means after arrival of said recording apparatus is the same as a
recovery mode executed by said recovery means when said recording head is exchanged.~~

13. (Currently amended) An ink jet recording apparatus to be shipped
in which a recording head filled with transporting ink different from the recording ink is
mounted on a carriage, said apparatus comprising:

~~a carriage for mounting a recording head for effecting recording by
discharging recording ink and for moving said recording head; and~~

~~a mounting section for mounting an ink tank for storing the recording ink to
be supplied to said recording head;~~

wherein said recording apparatus is forwarded from a manufacturing factory in a condition that said recording head filled with transporting ink different from the recording ink is mounted on said carriage, and further comprising:

recovery means for effecting a recovery operation with respect to said recording head;

detection means for detecting whether said an ink tank for storing recording ink is mounted on said mounting section carriage; and

alarm alert means for emitting alarm to the user of said recording apparatus if the fact that said ink tank is not mounted on said mounting section upon first usage of said recording apparatus by the user is detected by means of said detection means providing an alert if said detection means detects that said ink tank is mounted on said carriage when the recovery operation is executed for a first time after arrival of said recording apparatus.

14. (Currently amended) An ink jet recording apparatus according to claim 1, ~~12 or 13~~, wherein said recording head includes an ink discharging electrothermal converter for generating thermal energy utilized for discharging the ink.

15. (Currently amended) An ink jet recording apparatus according to claim 14, wherein ~~he~~ the ink is discharged by utilizing pressure change based on growth of a bubble created by film boiling caused by the thermal energy generated by said electrothermal converter.

16. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter within said recording head before or during the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

17. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink discharging electrothermal converter within said recording head before or during the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

18. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter and an ink discharging electrothermal converter within said recording head before or during the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

19. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is discharged by an ink

discharging electrothermal converter within said recording head before or during the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

20. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter within said recording head and the transporting ink is discharged by an ink discharging electrothermal converter during the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

21. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

22. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink discharging electrothermal converter within said recording head from before the ink

suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

23. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter and an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

24. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is discharged by an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

25. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and the transporting ink is heated by an ink temperature maintaining electrothermal converter and the transporting ink is discharged by an ink discharging electrothermal converter within said recording head ~~form~~ from before

the ink suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode.

a' 26. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, wherein said recovery means comprises suction means for effecting ink suction from said recording head and, when the transporting ink is heated and discharged by an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in ~~said~~ the on-arrival recovery mode, an input signal value, frequency, ink color to be inputted and a discharge port can be selected appropriately, and any input signal value, frequency and ink color can be inputted to said ~~ink temperature holding~~ electrothermal converter of said recording head.

27. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising time counting means for counting an elapsed time from ~~the forwarding~~ when the recording apparatus is shipped.

28. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising time reading means for reading ~~the~~ an elapsed time from ~~the forwarding~~ when the recording apparatus is shipped.

29. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising control means for judging and determining a heating amount of said recording head on the basis of ~~the~~ an elapsed time from ~~the forwarding~~ when the recording apparatus is shipped.

30. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising temperature history storing means for storing a temperature history from ~~the forwarding~~ when the recording apparatus is shipped.

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31. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising temperature history reading means for reading a temperature history from ~~the forwarding~~ when the recording apparatus is shipped.

32. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising heating control means for judging and determining a heating amount of said recording head on the basis of a temperature history from ~~the forwarding~~ when the recording apparatus is shipped.

33. (Original) An ink jet recording apparatus according to claim 32, wherein a heating temperature for each color can be set by said heating control means.

34. (Currently amended) An ink jet recording apparatus according to claim ~~1, 12 or 13~~ 1, further comprising storing means capable of re-writing and calling an elapsed time and temperature history from ~~the forwarding~~ when the recording apparatus is shipped.

35. (Currently amended) An ink jet recording apparatus according to claim ~~12 or 13~~ 1, wherein viscosity of the transporting ink is greater than that of the recording ink.


36. (Currently amended) A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving ~~said the~~ the recording head, and recovery means for effecting a recovery operation with respect to ~~said the~~ the recording head, the method comprising the steps of:

~~forwarding said~~ shipping the ink jet recording apparatus from a manufacturing factory in a condition that ~~said the~~ the recording head filled with transporting ink different from the recording ink is mounted on ~~said the~~ the carriage; and

~~executing an on-arrival recovery mode different from a normal recovery mode executed by said recovery means after first usage of said recording apparatus by the user by means of said recovery means upon the first usage, with respect to said recording head~~ controlling the recovery means such that an on-arrival recovery mode executed first by the recovery means after arrival of the recording apparatus differs from a normal

recovery mode executed by the recovery means after a first usage of the recording apparatus.

37. (Currently amended) A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving ~~said~~ the recording head, and recovery means for effecting a recovery operation with respect to ~~said~~ the recording head, the method comprising the steps of:

 ~~forwarding said~~ shipping the ink jet recording apparatus from a manufacturing factory in a condition that ~~said~~ the recording head filled with transporting ink different from the recording ink is mounted on ~~said~~ the carriage; and

~~executing an on-arrival recovery mode same as a recovery mode executed upon exchange of said recording head among a plurality of recovery modes executed by said recovery means after first usage of said recording apparatus by the user by means of said recovery means upon the first usage, with respect to said recording head~~ controlling the recovery means such that an on-arrival recovery mode executed first by the recovery means after arrival of the recording apparatus is the same as a recovery mode executed by the recovery means when the recording head is exchanged.

38. (Currently amended) A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving ~~said~~ the recording head, and a mounting section

for mounting an ink tank for storing the recording ink to be supplied to ~~said~~ the recording head, the method comprising the steps of:

~~forwarding said~~ shipping the ink jet recording apparatus from a manufacturing factory in a condition that ~~said~~ the recording head filled with transporting ink different from the recording ink is mounted on ~~said~~ the carriage; and

~~emitting alarm to the user of said recording apparatus if the fact that the said tank is not mounted on said mounting section upon first usage of said recording apparatus by the user is detected~~ effecting a recovery operation of the recording head by use of recovery means;

detecting whether the ink tank is mounted on the carriage; and

providing an alert if detected that the ink tank is mounted on the carriage when the recovery operation is executed for a first time after arrival of the recording apparatus.

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